

CLAIMS

What is claimed is:

1. An apparatus for providing an isolated ground of a horn activation circuit of a steering wheel assembly comprising an airbag module, the apparatus comprising:

a non-conductive insulator for receiving and engaging a conductive wire, wherein said wire and said insulator are configured to engage at least one electrically isolated securement member of the steering wheel assembly, wherein the airbag module is movably secured to said insulator for movement between a first position and a second position wherein the horn circuit is completed as said airbag module moves from said first position to said second position; and

a wire harness electrically communicating with said wire and another wire harness electrically communicating with at least one contact portion of the airbag module, said at least one contact portion making contact with said wire as said airbag module moves from said first position to said second position.

2. The apparatus as in claim 1, wherein said insulator is secured to the airbag module via a plurality of mounting bolts.

3. The apparatus as in claim 1, wherein said insulator is secured to the airbag module by a plurality of non-conductive guide members and a plurality of nuts which movably secure said insulator to the airbag module and the length of said non-conductive guide members determines the distance the airbag module must travel before the horn circuit is completed.

4. The apparatus as in claim 3, wherein said non-conductive guide members are configured to be positioned over securement studs of a retainer

ring of the airbag module and said non-conductive guide members are configured to be slidably received within openings of said insulator.

5. The apparatus as in claim 4, wherein a biasing spring is located about each of said guide members and said biasing spring maintains said insulator in a facing spaced relationship with regard to said at least one contact point.

6. The apparatus as in claim 1, wherein said non-conductive insulator comprises a plurality of tabs and grooves for receiving and engaging said conductive wire.

7. An isolated ground for a floating horn circuit of a driver's-side airbag module, comprising:
a non-conductive insulator;
a conductive member secured to said non-conductive insulator;
a plurality of securement members for securing said insulator to the airbag module;
a plurality of biasing members disposed over said plurality of securement members wherein said biasing members maintains said conductive member in a spaced relationship with respect to a conductive portion of the airbag module.

8. The isolated ground as in claim 7, further comprising:
a first electrical conductor secured to said conductive member and a second electrical conductor secured to said conductive portion.

9. The isolated ground as in claim 7, wherein said non-conductive insulator is configured to have at least one opening for allowing a securement member to pass therethrough and engage a portion of said conductive member.

10. The isolated ground as in claim 9, wherein said securement member is electrically insulated such that grounding of said conductive member by said securement member is prevented.

11. The isolated ground as in claim 7, wherein said conductive portion of the airbag module is integrally formed with a base plate of the airbag module.

12. The isolated ground as in claim 7, wherein said conductive member is a wire received and engaged by a plurality of tabs and grooves formed in said non-conductive insulator.

13. An isolated ground for a horn activation circuit of a steering wheel armature having an airbag module secured thereto, comprising:

a pair of insulating members disposed between the steering wheel armature and a pair of conductive members that are in electrical communication with a portion of a ground circuit of the horn activation circuit;
a plurality of biasing members for mounting a conductive portion of the airbag module in a facing spaced relationship with regard to said conductive member, said conductive portion being in electrical communication with another portion of said ground circuit;

wherein a horn activation circuit is completed when the biasing force of the plurality of biasing members is overcome and said contact member makes contact with a portion of the airbag module.

14. The isolated ground as in claim 12, wherein said pair of insulating members each comprise a pair of integrally formed cylindrical members configured for insertion into complementary openings of the steering wheel armature.

15. The isolated ground as in claim 14, wherein said conductive portion of the airbag module comprises a plurality of integral protrusions that

are configured to be received within the integrally formed cylindrical members of said pair of insulating members and wherein at least one of said plurality of integral protrusions makes contact with said pair of conductive members when the biasing force of the plurality of biasing members is overcome thereby completing or closing the horn activation circuit.

16. The isolated ground of claim 15, wherein said pair of insulating members are mounted to the steering wheel armature such that a portion of the steering wheel armature is disposed between said pair of insulating members and the airbag module.

17. A steering wheel and airbag module assembly, comprising:
a steering wheel armature having a lower mounting side and an upper mounting side;
an airbag module configured to be mounted to said upper mounting side;
a floating horn switch disposed between said steering wheel armature and said airbag module wherein application of a force to said airbag module causes said floating horn switch to close, said floating horn switch comprising an isolated ground, said isolated ground being electrically isolated from said steering wheel armature.

18. The assembly of claim 17, wherein said isolated ground comprises:

a non-conductive insulator for receiving and engaging a conductive wire, said non-conductive insulator being secured to said airbag module in a facing spaced relationship defined by a plurality of biasing members disposed between a portion of said non-conductive insulator and a portion of said airbag module, wherein said conductive wire is disposed on a surface of said non-conductive insulator facing said airbag module and said non-conductive insulator and said conductive wire are configured to engage at

least one securement member of said steering wheel armature assembly in order to secure said airbag module to said steering wheel armature;

a first electrical connection secured to said conductive wire and a second electrical connection secured to a conductive portion of said airbag module, wherein said airbag module is movably secured to said insulator for movement between a first position and a second position wherein a conductive portion of said airbag module makes contact with said conductive wire and said floating horn switch is closed as said airbag module moves from said first position to said second position.

19. The assembly as in claim 18, wherein said non-conductive insulator is secured to the airbag module via a plurality of mounting bolts and said plurality of biasing members are disposed over said plurality of mounting bolts between a surface of said airbag module and a portion of said non-conductive insulator, wherein the biasing force of said plurality of biasing members defines said first position.

20. The assembly as in claim 18, wherein said insulator is secured to the airbag module by a plurality of guide members and nuts which movably secure said insulator to the airbag module and the length of said guide members determines the distance the airbag module must travel before the horn circuit is completed.

21. The assembly as in claim 20, wherein said guide members are configured to be positioned over securement studs of a retainer ring of the airbag module and said guide members are configured to be slidably received within openings of said insulator.

22. The assembly as in claim 18, wherein said plurality of biasing members are located about each of said guide members and said plurality of biasing members maintain said insulator in a facing spaced relationship with regard to said conductive portion of said airbag module.